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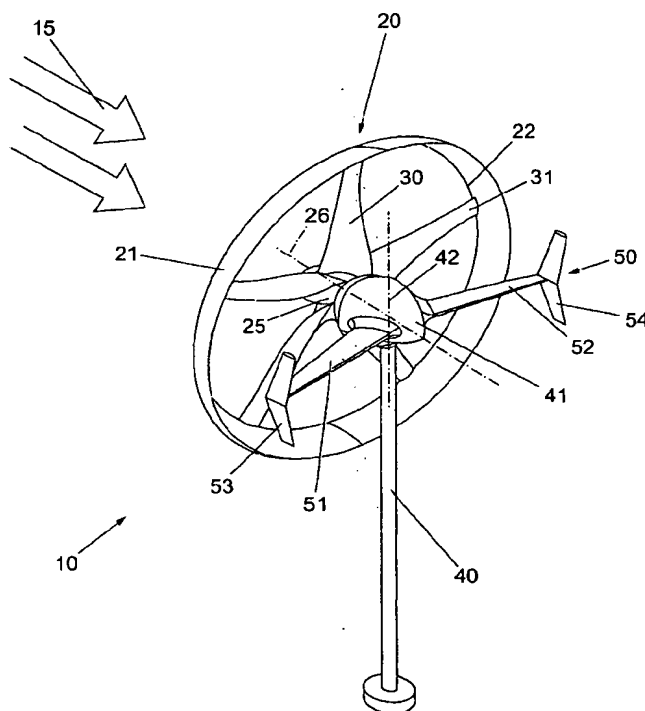
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(54) Title: WIND TURBINE



(57) Abstract: There is described herein a rotor for a wind turbine comprising a plurality of radial blades and a ring-shaped aerofoil diffuser connecting the outer tips of the blades. Further there is described a wind turbine comprising said rotor and further comprising a nacelle and a mounting means adapted to allow rotation of the turbine and rotor about a directional axis perpendicular to the rotational axis, thus allowing the turbine to be oriented in the optimum direction depending on wind conditions. A furling means is disclosed to effect a change in orientation depending on wind speeds. A wind turbine system is also disclosed comprising: a wind turbine driven generator and means for providing a power output, the power output connected to a heating system, a grid-tie inverter or stand alone inverter adapted to supply power to local or grid power infrastructure, or an energy storage system. A method of controlling the level of power taken from a wind turbine; and a wind turbine comprising means for reducing the operating vibrations caused by harmonic resonance within the turbine, tower and mounting structure are also described.

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GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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# INTERNATIONAL SEARCH REPORT

International Application No  
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 F03D1/04 F03D1/06 F03D7/02 F03D9/00 F03D9/02 F03D11/04		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 F03D		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1 467 227 A (G.M. CAPELL) 4 September 1923 (1923-09-04)	1-13
Y	page 1, line 10 - line 63; figure 1	14-23, 48-56
X	US 5 910 688 A (LI WAN-TSAI) 8 June 1999 (1999-06-08) column 2, line 15 - line 59; figures	1-5,7-12
X	GB 213 022 A (CHARLES ESMOND NIGHTINGALE) 27 March 1924 (1924-03-27) the whole document	1-8
X	US 104 918 A (C.H.ST. CLAIR) 28 June 1970 (1970-06-28) the whole document	1,2,4,5, 7-9
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search 30 August 2004		Date of mailing of the international search report 06. 12. 2004
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer de Rooij, M

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 92 18 214 U (MOELZER HANS DR MED) 9 September 1993 (1993-09-09) page 2, paragraph 2 - page 3, paragraph 1 page 4, paragraph 3; claims; figures	1-3,7,8, 12
Y	GB J01175A (CHILDS JOSEPH GERSHOM ; HILL THOMAS SIDNEY (GB)) 13 January 1910 (1910-01-13) the whole document	14-23, 48-56
A	US 1 661 847 A (OLSON EDWIN N ET AL) 6 March 1928 (1928-03-06) the whole document	13-19, 21,23
A	DE 32 31 496 A (MOLZAN EMIL) 8 March 1984 (1984-03-08) abstract; figures page 7, line 26 - page 8, line 35	13-17
Y	DE 92 17 043 U (E. BRONESKE) 25 February 1993 (1993-02-25) page 1, paragraph 3 - paragraph 4; claims; figures	48-56
A	EP 1 065 374 A (MITSCH FRANZ) 3 January 2001 (2001-01-03) abstract; figure 1 paragraph [0005] - paragraph [0008] paragraph [0015] - paragraph [0018]	48,49
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB2004/001176

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-23, 48-56

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-23,48-56

A rotor for a wind turbine with a plurality of blades and a ring-shaped aerofoil diffuser connecting the outer tips of the blades

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2. claims: 24-47

A wind turbine with an electronic control system, wherein i.e. electrical power may be supplied to energy dissipaters when the power from the wind exceeds a predetermined power and a method of controlling the level of power taken from a wind turbine.

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB2004/001176

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